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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,084	08/21/2003	Pedro J. Moreno	200308776-1	6925

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EXAMINER

MARIAM, DANIEL G

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/645,084

Applicant(s)

MORENO ET AL.

Examiner

DANIEL G. MARIAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/22/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 recites the limitation "the computer" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5-10, and 14-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Moreno, et al. (Using the Fisher Kernel Method for Web Audio Classification).

With regard to claim 1, Moreno, et al discloses a method for classifying, identifying or verifying an object, i.e., classifying large collection of audio files, comprising the computer implemented, i.e., automatic classification (See for example, page 2417, section 1), steps of: representing an object by a respective sequence of vectors; modeling the sequence of vectors with a respective generative model such that the object, i.e., audio, is represented by the generative model, and using the generative model, classifying, identifying or verifying the object (See pp. 2417-2418, section 2, and subsections 2.1-2.2).

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With regard to claim 5, the method of claim 1, wherein the object is any one or combination of audio signals, speech signals, image data, video data, multimedia, facial data, DNA representations, electro-cardiology signals and genetic data and derivatives of any said signals or data (See for example, page 2417, section 2).

With regard to claim 6, the method of claim 1, wherein the respective generative model is a probabilistic distribution model (See page 2418, section 2.1).

With regard to claim 7, the method of claim 6, wherein the probabilistic distribution model employs a probability density function (See page 2418, section 2.1).

With regard to claim 8, the method of claim 6 wherein the probabilistic distribution model includes any one or combination of a diagonal covariance Gaussian Mixture Model, a full covariance Gaussian Mixture Model, and a Hidden Markov Model (See for example, Abstract, 2<sup>nd</sup> paragraph; page 2417, section 2; and page 2418, section 2.2).

With regard to claim 9, the method of claim 1, wherein at least the step of classifying is supported by one of a Support Vector Machine, a Neural Network, a Boosting Classifier or other discriminative classifier (page 2418, section 2.2, last paragraph; and page 2419, section 4.2).

Claims 10, 14, 15, 16, and 17 are rejected the same as claims 1, 5, (6 or 7), 8, and 9 respectively except claims 10, 14, 15, 16, and 17 are directed to system claims. Thus, arguments analogous to those presented above for claims 1, 5, (6 or 7), 8, and 9 are respectively applicable to claims 10, 14, 15, 16, and 17. Additionally, applicants' attention is further invited to pp. 2418-2420, sections 3-4.

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Claims 18 and 19 are rejected the same as claims 1 and (6 or 7) respectively except claims 18 and 19 are directed to system claims. Thus, arguments analogous to those presented above for claims 1 and (6 or 7) are respectively applicable to claims 18 and 19. Additionally, applicants' attention is further invited to pp. 2418-2420, sections 3-4.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4, 11-13, and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Moreno, et al. (hereinafter "Moreno") (Using the Fisher Kernel Method for Web Audio Classification) in view of Hollmén, et al (A Learning Vector Quantization Algorithm for Probabilistic Models).

With regard to claim 2, Hollmén, et al discloses all of the claimed subject matter as already addressed above for claim 1, and incorporated herein by reference. Hollmén, et al does not expressly call for calculating a distance from the respective generative model to any other generative models based on a distance metric; and using the calculated distance to classify, identify or verify the object. However, Hollmén, et al (See for example, page 722, section 3.1) teaches this feature. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the teaching as taught by Hollmén, et al into the system of Moreno, if for no other

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reason than to classify the object (or audio) by measuring distance between the models on the basis of a likelihood-based distance metric.

With regard to claim 3, the method of claim 2, wherein the distance metric includes any one of Kullback-Leibler type distances and Arithmetic-Harmonic Sphericity distance (See page 722, section 3.1 of Hollmén, et al).

With regard to claim 4, Moreno (as modified by Hollmén, et al) discloses substantially the claimed invention as set forth above for claim 2 (See page 722, section 3.1). Moreno (as modified by Hollmén, et al) does not expressly call for wherein the distance metric follows the properties of: (a) distance of an object to itself is zero, and b) distance of an object to any other object is larger than or equal to zero. At the time of the invention, it would have been obvious matter of design choice to modify Moreno (as modified by Hollmén, et al) by having the distance metric define a distance of an object to itself is zero, and a distance of an object to any other object is larger than or equal to zero, since applicants have not disclosed that having a distance of an object to itself is zero (and to any other object is larger than or equal to zero) solves any stated problem or is for any particular purpose and it appears that the distance metric would perform equally well with the likelihood-based distance metric set at any non-negative distance value.

Claims 11, 12 and 13 are rejected the same as claims 2, 3 and 4 respectively except claims 11, 12 and 13 are directed to system claims. Thus, arguments analogous to those presented above for claims 2, 3 and 4 are respectively applicable to claims 11, 12 and 13. Additionally, applicants' attention is further invited to pp. 2418-2420, sections 3-4 of Moreno.

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Claim 20 is rejected the same as claims 2 and 5 except claim 20 is directed to a system claim. Thus, arguments similar to those presented above for claims 2 and 5 are applicable to claim 20.

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Number 6,061,652, and a publication to: Bengio, et al "Learning the Decision Function for Speaker Verification".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. MARIAM whose telephone number is 571-272-7394. The examiner can normally be reached on M-F (7:00-4:30) FIRST FRIDAY OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

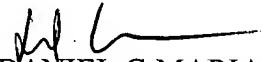
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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
DANIEL G MARIAM  
Primary Examiner  
Art Unit 2624

November 8, 2006